

*A Brief Proposal and Executive Summary for SWESource  
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Working paper outlining a proposed national-scope initiative that would develop a website and associated databases of information, curriculum, and other materials for K-12 and post-secondary recruitment and retention of women in the engineering disciplines.

**NOTICE**

*This document is an unedited, stream-of-consciousness proposal for a set of content, capabilities, goals, and ideas for a SWESource Site that would complement the ideals of the Align by '09 program. These ideas represent a compilation of earlier informal conversations that I had with SWE officers last year in which I presented various pieces of the keypoints listed below. Please note that this is a preliminary draft and is intended as a set of working points for further discussion. The goals presented within are extremely ambitious, but I believe that they are accomplishable, with a timeframe determined by the enthusiasm and energy of the local SWE members. As noted at the bottom of this document, the proposed SWESource site is ambitious enough that it may be worth seeking formal funding and enlisting professional support from the College of Engineering.*

- Emphasis on reaching the youth. Have a section of the site devoted to “Encouraging K-12 Girls in Science and Technology”. This would leverage the knowledge, interests, background, and energy of the Outreach committee to develop materials targeting K-12 from a student, a parent, and an instructor standpoint. This is a critical section, as most girls are lost at these formative years and enter their adult lives with a bias against the sciences, which is hard to overcome. By reaching girls at this young age and encouraging them towards sciences and technology, you have more girls that may enter the high school, University, and professional levels with an interest in the sciences.
  - Students. Have a section of the site designed for girls in grades 6-12. This would include success stories of girls their ages, projects that have been done at schools targeting their grade (GEMS, etc), resources to learn more about careers the sciences, etc. This subsite is designed for the girls to access it themselves, and all materials within are geared towards them as a direct audience. While parents may access this section of the site, it is not intended for them. The key focus of this site is to reach the girls on a personal level, to show them that a career in science/technology and being female are not mutually exclusive. Show them some “cool” careers of women in the sciences (this would include stories focusing on how these successful women prepared for their careers by talking about what they studied in school, talking about any obstacles they faced and how to persevere and overcome them, etc).
  - Parents. This section of the site focuses on parents and how to encourage their girls to look upon science and technology as a possible career path

and to incorporate it into their lifestyle. Have sections (these could be tutorials written by SWE or links to other tutorials on the Web) on basic computer literacy, etc. There would be lots of materials for parents to help foster their child's interests in science and technology and help encourage her along her chosen career path, if it is a non-traditional one for a girl (such as science). This would also have a special section on projects and activities that parents should be aware of, including programs that might be available in their area (GEMS, etc) and even simple science projects (maybe have pages that talk about the ones that the Outreach folks do, and also link to some good ones on the Web) that parents can do with their kids to show them "cool" things that science can do. There might also be a special grade 1-6 section for projects that parents can do with their young children.

- Instructors. This would provide similar resources as the parents section, but geared towards classroom instructors. This would provide lesson plans, project ideas, and materials discussing the unique challenges of encouraging females in the sciences and technologies and ways that instructors can help encourage them in these interests.
- Helping to select the right University program. This subsite would focus on helping high school girls find a University program that matches their interests and can help support them.
  - Database of major Universities and how well they support women in the sciences. This would include chapters/branches of professional organizations like SWE, local support groups, scholarships, etc. URLs and other material to the local SWE chapter, scholarships, etc, would be provided in this database. The idea is to get girls that maybe are questioning their interest in the sciences to apply to Universities that have strong programs in place already, where they will have plenty of support, and to encourage girls that are firm in their interests to some of the Universities without strong programs to try and encourage greater local support. One major aspect of this subsite would be a committee that would contact and interact with local SWE chapters at all of these Universities and establish ties with them to provide comprehensive information on female engineering life there. This will be the primary source of scholarship, etc, information. This site would also be used potentially to place pressure (in conjunction with the National SWE and other professional organizations) on those Universities to put programs into place. This site would also allow girls that have applied to a University or are interested in it to immediately find a rich selection of resources geared towards their specific questions about female life in engineering there. Instead of trying to find info on the local SWE chapter or other pages, there would be a big link to the SWE chapter, interested SWEesters there who would be glad to answer questions, lists of scholarships to apply to, etc. One of the goals here would be to create a system where the local SWEs would each have a database entry on our site that they could update. We would have to convince them that it would

be a good thing for them to keep this entry updated, and, if this can be done, this section of the site would be constantly updated.

- Resources to help girls find out about college life in general and some of the programs of study available to them. This site might also include information preparing them for the discrimination they may face, and ways of coping with it.
- Helping University girls find the resources they need. This subsite would focus on girls already in a University that does not have a big support structure in place for female engineers.
  - Information on how to form a local branch of SWE or other form of local support group if their University or college does not have one. This might include organizational materials, mentors that would be willing to help them, etc. This would be a HUGE way of dealing with smaller colleges without a big female engineering presence and forming some kind of local support group there that could eventually lead to a SWE colony or at least some contact with SWE. In the longrun this could increase SWE's national rolls, and also help pressure more Universities and colleges to improve the environment for women engineers.
  - This would have links back to the master database of Universities to help them find Universities in their area that might have established SWE or other support programs in place that they could use for guidance. This might also connect back to the alumnae database to find alumnae from University that might be willing to assist by volunteering to mentor some of the girls, or help establish a support group, etc.
- Helping University girls and Professionals excel in their careers. This subsite would focus on girls in all Universities (both those with support programs and those without) and Professional women in the sciences. The idea of the site would be to connect these women together to help them form collaborative bonds. This could lead to mentorship among elder and younger students, professionals and students, elder and younger professionals, etc.
  - Initially this site would include links to various existing SWE resources (if any), however, the long-term goal would be to create a master nation-wide database of SWE members and alumnae. This would be different from the simple paid membership database that the National SWE maintains, in that it would be an opt-in program, with a lot more biographical details. There are a number of social issues that have to be considered here (such as whether an alum of one SWE would want to only help her alma mater SWE, or any SWE, etc), but, assuming those kinds of issues do not come into play, this is a general idea of what this site might provide. It would allow any SWE in the country to have its members submit profiles to it. These profiles might include major, interests, hobbies, awards, resume, etc. Each local SWE would have a page that they could link to that would only show its local members (for branding purposes), but the idea of this site would be to link members together and transcend geographical borders. Hence, a girl in a SWE at the UI might find a SWEester in Wisconsin that she shares a lot of interests with, and they might become

friends or collaborate. This would be ESPECIALLY powerful with summer internships, as most companies recruit from numerous campuses, and this site would allow the girls to locate others interning at the same company that are SWEesters. As the site grows in popularity, there is the potential that companies might start looking at it as a recruiting tool, and having the resumes on the site might provide a job/internship-finding resource. Alumnae from all SWE chapters would be encouraged to submit their information to this master database. This would help local current SWE members interact with alums of their alma mater, but would also help girls meet professional SWE members that reside in their area (ie, a grad of Wisconsin comes and works in the UI area, etc). This could also help lead to collabs between campuses. This professional section would also help professional women engineers meet each other and establish bonds, just as it does for students.

- Funding and Resources.
  - There is a great National Science Foundation (NSF) interest in encouraging women in the sciences, and there are a number of programs and grants available in this area. One possible avenue to create this site would be to find a sponsoring faculty member to seek one of these grants to fund the creation of this site. If sufficient funding were available, that could be used to help fund professional staff and/or cover office supplies and other resources needed to create a site of this magnitude. This money could also be used to fund small projects in other SWEs around the country to generate content for the site (although we would also try and encourage those other SWEs to contribute on a volunteer basis). This money could also be used in advertising and marketing to publicize the site once it is created.
  - From a personnel standpoint, I think that the local SWE can provide the necessary people to create and manage this site. Even a small portion of the site proposed above would be a tremendous asset to the community, and the site can easily be expanded over a period of time to reach the goals set forth above. It might also be possible, once the groundwork is in place, to encourage other SWEs around the country to contribute content to the site.
  - All of the technologies required to implement this site are technologies that have been, or are being, actively developed at the University of Illinois, and by the time the initial content acquisition and creation is completed, these technologies would most likely be at a maturity level such that they could be incorporated into the site in a production manner.